STUDY PROTOCOL

Protocol Title:
Registry to **I**nvestigate the Efficacy and Safety of **V**enaBlock Ve**I**n S**E**aling System for Va**R**icose Veins in Sing**A**pore (**RIVIERA**)

Protocol:
Protocol version 1.4

Protocol Date:
29 August 2019

Principal Investigator:
Dr Tang Tjun Yip, Consultant, Department Vascular Surgery, Singapore General Hospital

Co-Investigator:
Dr Chong Tze Tec, Senior Consultant, Department Vascular Surgery, Singapore General Hospital

Study Team Members:
Charyl Yap Jia Qi, Clinical Research Coordinator, Department of Vascular Surgery, Singapore General Hospital

Irdina Izwani Bte Shrmani, Assoc. Clinical Research Coordinator, Department of Vascular Surgery, Singapore General Hospital

PROTOCOL SIGNATURE PAGE

Protocol Title: Registry to Investigate the Efficacy and Safety of VenaBlock Vein Sealing System for Varicose Veins in Singapore (RIVIERA)

Protocol Version/ Date: 1.4 / 29 August 2019

Sponsor Name: NA

Declaration of Investigator

I confirm that I have read the above-mentioned protocol and its attachments. I agree to conduct the described study in compliance with all stipulations of the protocol, regulations and ICH E6 Guideline for Good Clinical Practice (GCP).

Principal Investigator Name: _____Dr. Tang Tjun Yip_____

Principal Investigator Signature: _____

Date: _____

Summary:

The purpose of the *Registry to Investigate the Efficacy and Safety of Venablock© Vein Sealing System for Varicose Veins in Singapore*, is to investigate the performance of cyanoacrylate glue closure (CAC) using this device, in which multiple incompetent superficial saphenous truncal veins (great saphenous vein (GSV), short saphenous vein (SSV), anterior accessory saphenous vein (AASV) will be treated at the same setting, and compression stockings will not be used postoperatively. The inclusion criteria for this study will be liberalized, and veins up to 12mm in diameter will be treated. As such, RIVIERA will be the first prospective trial conducted in Asia on a predominantly Asian cohort of patients to report on the performance of *Venablock©* for incompetent truncal veins. This study specifically focuses on the initial technical outcomes, safety, anatomical occlusion, and patient experience after treatment with *Venablock©* with broader inclusion of patients than previous trials.

Primary Objective:

To assess the efficacy of the Venablock© Vein Sealing System (VBVS) for the treatment of lower extremity superficial truncal veins in a real-world clinical setting in a multi-racial Asian population in Singapore. The study will evaluate the technical, anatomical and clinical performance of VBVS performed on multiple truncal varicose veins, and without mandatory postoperative compression. The two primary endpoints for this evaluation are technical success at the time of the procedure, and anatomical success, reported as complete closure at 2-weeks, 3 months, 6 months and 12 months.

Secondary Objectives:

To assess the quality of life and functional results of the Venablock© Vein Sealing System

- The quality of life scores at baseline, 2 weeks, 3 months, 6 months and 12 months using the EQ-5D, AVVQ and CIVIQ scores
- The clinical change using the VCSS at baseline, 2 weeks, 3 months, 6 months and 12 months
- The pain score over the first 10 days
- The time taken to return to work and normal activities
- Occlusion rates at 2 weeks, 3 months, 6 months and 12 months
- Patient satisfaction 2 weeks, 3 months, 6 months and 12 months
- Cost effectiveness of the intervention

Definitions

Technical success is defined as the ability to perform the procedure as planned and achieve immediate occlusion after the ablation.

Anatomical success is defined as the occlusion of the treated truncal vein(s).

Recurrence or treatment failure is defined as a re-opening of a segment > 5cm in length on Duplex ultrasound.

Background

Minimally invasive endovenous ablation techniques have become an established treatment of great saphenous vein (GSV) insufficiency, which is a common medical condition in the western world. Both endovenous laser ablation (EVLA) and radio frequency ablation (RFA) have proved to be effective, and showed superiority over open surgery with regards to post procedural pain, quality of life and time to recovery[1-4]. Recent National Institute of Clinical Excellence (NICE) guidelines state that open varicose vein surgery is no longer acceptable and should only be performed where endotherrmal ablation or ultrasound-guided foam sclerotherapy is unavailable[5].

Thermal ablative modalities, however, carry the risk of damaging the surrounding tissues of the vein and thus necessitate tumescent anaesthesia, which requires multiple punctures along the treated vein segment. This may prolong procedural time and adds to patients' discomfort during treatment. Despite the use of tumescent anaesthesia there is still a subset of patients who have postoperative pain, which can last for several weeks[6, 7]. To eliminate patient discomfort and side effects, new non-thermal, non-tumescent methods have been introduced into the endovebous arena to overcome these drawbacks and to focus on enhancing patients' experience even further. These technologies completely obviate the need for uncomfortable thermal ablation and tumescent infiltration with possibly a similar level of efficacy as RFA and EVLA) at least in the short term. Examples of NTNT techniques that have been developed include ultrasound-guided foam sclerotherapy[8], Venablock©[14],the VenaSeal™ Closure System [9] and mechano-chemical endovenous ablation (MOCA)[10] .

Venablock©

Venablock© is an endovenouse device which delivers n-butyl-2-cyanoacrylate to treat GSV reflux and has been available in market for the past three years[14]. The mechanism of the cyanoacrylate glue is simple: plasma and blood stimulates its polymerization and leads to closure of the target veins[12]. The recently published VeClose study showed in 214 legs, 112 patients RFA and 102 patients CAE - the 12-month complete occlusion rates was 99% in the CAE group and 95.5% in the RFA group. This suggests that CAE might be associated with higher rates of successful occlusion[13].

Study Description

The aim of this registry is to report a prospective Singaporean experience using the VBVS for the treatment of primary great and short saphenous vein reflux. We wish to evaluate its safety, efficacy, and performance. Although it has been shown to be safe and efficacious in its initial trials, these studies have been limited to generally a Caucasian-based population, where the vein size, anatomy and distribution of venous incompetence can be different from their Asian counterparts[15].

Target Population

Patients referred for treatment of symptomatic varicose veins will be recruited if they are found to have primary great saphenous (GSV), small saphenous vein (SSV) or anterior accessory saphenous vein (AASV) incompetence on colour Duplex ultrasound.

Study Design

A set protocol will be constructed and adhered to in order to evaluate the Venablock© Vein Sealing System at Singapore General Hospital (SGH).

Ethical approval will be gained from the internal hospital board and data will be collected prospectively onto a secure computer database. Patients can either be fee-paying individuals, who are partially subsidized from their Central Provident state fund or hold private health insurance. They will undergo a clinical examination by a consultant vascular surgeon or delegated junior member of the team. This includes assessment for GSV/SSV/AASV reflux, CEAP (clinical, aetiological, anatomical and pathophysiological elements) classification[7] and previous venous procedures. A Duplex ultrasound evaluation, which includes colour and spectral Doppler in addition to B-mode, will be performed independently by the one of the dedicated vascular sonographers from the radiology department of the hospital. Reflux is determined at the sapheno-femoral (SF)/ sapheno-popliteal (SP) junction standing position using the Valsalva manoeuvre or manual distal compression with rapid release respectively. Reflux as documented by ultrasound is defined and considered significant as retrograde flow of > 0.5 seconds. Patients are consented for Venablock© treatment being a relatively new technique under study. All patients will receive a procedure specific information leaflet in their native language, which explains the technique including risks and side-effects as well as a description of alternative techniques.

Inclusion criteria:

1. Age > 21 years old and ability to understand the requirements of the study and to provide informed consent
2. C2-C6 varicose veins/CVI (CEAP Class 1 patients will be excluded)
3. Symptomatic primary GSV,SSV or AASV incompetence, with reflux > 0.5 seconds on colour Duplex, including one or more of the following symptoms: aching, throbbing, heaviness, fatigue, pruritus, night cramps, restlessness, generalized pain or discomfort, swelling
4. Patients who had GSV, SSV or AASV diameters of 3mm to 12mm in the standing position

Exclusion Criteria:

1. Current DVT or history of DVT
2. Pregnant patients

3. Arterial disease (ABPI<0.8)
4. Sepsis
5. Patient who are unwilling to participate
6. Inability or unwillingness to complete the time-point questionnaires
7. Adverse reaction to sclerosant or cyanoacrylate previously
8. Multiple drug allergies
9. Previous intervention with the VenaSeal cyanoacrylate glue closure system
10. Severely tortuous GSV, SSV or AASV
11. Life expectancy < 1 year
12. Active treatment for malignancy other than non-melanoma skin cancer
13. Current, regular use of systemic anticoagulation (e.g., warfarin, heparin)
14. Daily use of narcotic analgesia or NSAIDS to control pain associated with venous disease

Baseline

At baseline, patients will be asked to fill out quality of life questionnaires (EQ-5D, AVVQ and CIVIQ) and will have their clinical scores assessed (CEAP and revised VCSS). Other demographic details will be logged on a dedicated proforma worksheet. On discharge after their varicose vein intervention, all patients will be provided with a diary to record their post-procedural pain every day for 10 days using a validated visual analogue scale (VAS) as well as to record when they return to their normal activities and are back to work.

Procedure

No special preparation is required for the Venablock© procedure. The investigator will confirm that the subject still meets inclusion and exclusion criteria. Sedation and/or a regional block may be utilized if needed for patient preference or if concomitant multiple stab avulsions are required. Under ultrasound guidance, the physician will locate the target vein(s) and the associated sapheno-femoral junction and/or sapheno-popliteal junction (as applicable). The subject is then prepped and draped according to standard practices. Venablock© treatment will be performed according to the IFU, and avulsions may be performed per investigator discretion. The subject will be discharged from the clinic according to standard practices. Prior to discharge, the Investigator will assess for the occurrence of adverse events. The subject will be instructed to take 30mg of acoxir orally two times a day for 7 days for pain control and minimise the risk of thrombo-phlebitis.

Follow-up

- Patients will be followed up in the outpatient clinic at 2 weeks, 3 months, 6 and 12 months.

Follow-up at 2 Weeks

- At the 2 weeks' follow-up, the diary containing details of the pain scores and how soon patients were able to return to normal activities/work will be collected. In addition, patients will be asked about any bruising or phlebitis they have had after their procedure. They will be examined and the revised Venous Clinical Severity Score (VCSS) will be recorded and will be asked to fill in the EQ-5D, AVVQ and CIVIQ scores. They will all receive a targeted duplex scan to assess occlusion of the treated vein.

Follow-up at 3 Months, 6 Months and 12 Months

- At the 3 months, 6 months and 12 months follow-up, patients will be examined and their VCSS will be recorded. They will also be asked to fill the EQ-5D, AVVQ and the CIVIQ scores. They will have a targeted venous Duplex scan to determine occlusion of the treated vein.
- As from the third month, patients found to have recurrence of their truncal veins will be assessed to see if they are symptomatic and require re-intervention. The method used for re-intervention will be dependent on the choice of the consultant in charge of the patient.
- Patients enrolled into the study may be contacted directly by telephone to clarify missing data for any of the time points
- Patient Satisfaction: At selected visits, the subject will complete a brief questionnaire rating satisfaction with treatment provided and whether the subject would undergo the treatment again.

Sample Size and Study Duration

- As a pilot study, we aim to recruit a cohort of 30 patients. If we recruit at least 3 patients per week, this will allow us to recruit the necessary number by 3 months. Thus, with 12 months follow-up the study will be running for around 2 years.

Statistical and Analytical Plans

Categorical data will be presented as frequency (percentage). Numeric data will be presented as mean (standard deviation) for parametric distribution and median (interquartile range) for non-parametric distribution.

The primary endpoint of complete closure at different time points will be reported as frequency and percentage (95% CI). Comparisons of the quality of life and functional results at baseline and after treatment at different time points will be examined using pair t-test or Wilcoxon Signed Rank test, where appropriate.

- A two tailed, p-value of <0.05 was considered statistically significant. Statistical analysis will be performed with SPSS statistical software, version 19.0 (IBM Corp. Armonk, NY).

Ethical Arrangements

- Ethical approval will be sought from a Regional Research Ethics Committee. Patients will be screened by one of the PIs from each of the designated centres or delegated to a responsible supervised junior clinician, who is also a member of the direct care team, and patients thought eligible will be provided with information material about the trial and varicose veins and its treatments.
- They will be invited to attend for their varicose vein procedures another day and will have until then to consider their participation into the trial (more than 24 hours to consider).
- On the day of their procedure, they will be asked to confirm their consent by providing a written consent prior to participating in the trial.

Data Handling and Dissemination of Results

- All patient data will be anonymized and stored on a password protected database under the guidelines of the Data Protection Act 1998. Patient records will be kept on paper in the form of the diary card questionnaires and clinical scoring sheets. These will be kept in a locked filling cabinet at the respective Clinical Trials Research Unit (CTRU) of the different hospitals involved in the study.
- Data and study findings will be presented locally within the hospital, as well as national and international peer reviewed presentations and peer-reviewed journals.
- The research data will be stored in a password protected PC account in accordance with the Singhealth CIRB Guideline: Data Security Guidelines for Personally Identifiable and other Confidential Data in Research - Electronic Data and all hardcopy data will be stored securely in our institution's medical records office.
- The PI and Co-investigators will access the data only through password protected intranet accounts as detailed in the Singhealth CIRB Guideline: Data Security Guidelines for Personally Identifiable and other Confidential Data in Research - Electronic Data
- The measures adopted will be in accordance with the Singhealth CIRB Guideline: Data Security Guidelines for Personally Identifiable and other Confidential Data in Research - Electronic Data
- The data will be kept for at least 6 years in a medium compatible with the Singhealth CIRB Guideline: Data Security Guidelines for Personally Identifiable and other Confidential Data in Research - Electronic Data

Adverse Events

An AE is defined as an identifiable, undesired or pathological change in the subject as indicated by signs, symptoms, illnesses, and/or other events that develop or worsen in severity during the course of the study, regardless of the relationship (related or unrelated) of the event to the investigational procedure and treatment. Subjects will be instructed to immediately report to the Investigator (during the follow-up period) any signs, symptoms, illnesses per the above definition. Each AE will be followed until resolved or stabilized at a level acceptable to the Investigator. Additional guidance on what constitutes an AE is described below:

- Any disease process that was present at the time of enrollment and is not worsened at the time of assessment is not considered an AE. Only an increase in severity of the condition should be reported as an AE.
- Elective hospitalizations or procedures that are pre-planned prior to the subject's enrollment will not be reported as an AE. An AE occurring as a result of an elective procedure should be reported.
- Re-interventions, hospitalizations and death are outcomes of an AE, but are not AEs themselves. These outcomes are reported as the primary event only when the cause of the outcome is unknown. In the event of death, a copy of the Death Certificate, autopsy report (if performed), and Investigator-prepared clinical summary of events leading to death will be obtained as soon as possible, but no later than 30 days from the date of notification of the death.
- Mild events that are inherent to and anticipated from performance of a minimally invasive treatment for varicose veins need not be recorded or reported unless there is a clinically significant change in frequency or severity from what is expected. For example, mild discomfort or mild bruising from the entry site of the needle stick is expected and does not constitute an AE.

Serious Adverse Event

An adverse event is considered serious if, in the view of the Medical Monitor, it resulted in any of the following outcomes:

- Death;
- A life-threatening AE;
- Inpatient hospitalization or prolongation of existing hospitalization;
- A persistent or significant disability or incapacity;
- Congenital anomaly or birth defect; or
- Other events that, based upon appropriate medical judgment, may jeopardize the subject and may require medical or surgical intervention to prevent one of the outcomes listed above.

Unanticipated adverse device effect

An unanticipated adverse device effect (UADE) as “any serious adverse effect on health or safety or any life-threatening problem or death caused by, or associated with, a device, if that effect, problem, or death was not previously identified in nature, severity, or degree of incidence in the investigational plan or application (including a supplementary plan or application), or any other unanticipated serious problem associated with a device that relates to the rights, safety, or welfare of subjects”. A list of anticipated events:

Allergic reactions to cyanoacrylates, such as hives, asthma, hay fever and anaphylactic shock

Allergic or other reactions to skin prep, local anesthetic, adhesive dressings

Arteriovenous fistula

Bleeding from the site of access

DVT

Edema in the treated leg

Embolization, including PE and paradoxical embolization with ischemia or infarct of the supplied tissue bed

Erythema

Headache

Hematoma

Hyperpigmentation or other skin discoloration

Hypertension

Hypotension

Infection at the access site

Non-specific mild inflammation of the cutaneous and subcutaneous tissue

Pain

Paresthesia, itching, burning sensation

Phlebitis

Pseudoaneurysm

Recanalization of treated vein

Septic thrombophlebitis

Superficial thrombophlebitis

Telangiectactic matting

Ulceration at the site of adhesive injections

Urticaria or ulceration may occur at the site of injection

Vascular injury, rupture or perforation

Visible scarring

CONSENT

- Consent to enter the study will be sought from each participant only after a full explanation has been given, an information leaflet offered and time allowed for consideration. Signed participant consent will be obtained. The right of the participant to refuse to participate without giving reasons will be respected. After the participant has entered the study the clinician remains free to give alternative treatment to that specified in the protocol at any stage if he/she feels it is in the participant's best interest, but the reasons for doing so will be recorded. In these cases the participants remain within the study for the purposes of follow-up and data analysis. All participants are free to withdraw at any time from the protocol treatment without giving reasons and without prejudicing further treatment.

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APPENDIX 1: Data Collection Form

Data Collection Form

Age : _____

BMI : _____

Smoker : ☐Yes ☐ No ☐ Ex (_____pack/years)

Gender : ☐ Male ☐ Female

Race : ☐ Chinese ☐ Malay ☐ Indian ☐ Others: _____

Indication : ☐ Pain ☐ Ache ☐ Swelling ☐ Heaviness ☐ Burning

☐ Itch ☐ Ulcer ☐ Others: _____

Duration : _____ months

Med History : ☐ HTN ☐ HPL ☐ DM ☐ IHD ☐ PE/DVT ☐ PVD

Anticoag. : ☐ Aspirin ☐ Warfarin ☐ Clopidogrel

ASA Class : ☐ I ☐ II ☐ III ☐IV

Previous treatment to varicose veins:-

Side	Site	Date	Treatment type

APPENDIX 2: Pre-Procedural Details

Pre-Procedural Details

Imaging Date: _____

Side	Size of vein (Prox – Mid – Distal)	LSV / SSV incompetence	BK / AK incompetence	Suprafascial outing	Accessory Reflux	Pelvic Reflux
Left						
Right						

CEAP Classification

Clinical	0	1A	1S	2A	2S	3A	3S	4aA	4aS	4bA	4bS	5A	5S	6
Etiology	Congenital			Primary			Secondary			No venous cause identified				
Anatomy	Superficial			Deep			Perforating			No venous location identified				
Pathology	Reflux			Obstruction			Both			No venous pathology identified				

APPENDIX 3: Pre-Op Clinical Assessment

Pre-op clinical assessment

Score	Definition
0	**Asymptomatic**
1	**Symptomatic, but able to carry out usual activities without compressive therapy**
2	**Able to carry out usual activities only with compressive therapy and/or limb elevation**
3	**Unable to carry out usual activities even with compression and/or elevation**
	Usual activities = patients' activities before the onset of disability due to venous disease

APPENDIX 4: Venous Clinical Severity Score (VCSS)

Venous Clinical Severity Score

Please indicate right or left leg or bilateral (R, L or B)

	Absent	Mild	Moderate	Severe
Pain	None	Occasional, non/ no analgesia restricting	With moderate activity, occasional analgesia	Daily, severe limitations, regular analgesia
Varicose veins>4mm	None	Few	Multiple GSV	Extensive GSV and LSV
Venous oedema	None	Evening/ankle	Afternoon/ above knee	Morning/requiring elevation
Skin pigmentation	None	Limited and old/brown	Diffuse lower third/ purple	Wide/ purple
Inflammation	None	Mild cellulitis in marginal area	Moderate involving most of gaiter area	Severe cellulitis or significant eczema
Induration	None	Focal <5cm	Medial or lateral less than lower 1/3	1/3 of lower leg or more

Number of active ulcers	0	1	2	3
Active ulcer duration	None	<3 months	>3 months <12 months	>12 months
Active ulcer diameter(cm)	None	<2	2-6	>6
Compression	Not used or non compliant	Intermittent use	Stockings worn most days	Stockings worn daily

APPENDIX 5: Procedural Details

Procedural Details

Op Date : _____ **Heparin Dose Used**: iu

Anaes. : ☐GA ☐ LA ☐ LA & Sedation **Volume of LA used: _____** **(1% Lignocaine)**

Phlebectomies : ☐Yes ☐ No

Location		**Puncture Site**	**Length treated (mm)**	**AK/BK**	**Time taken**	**Volume Used**
LSV	Right					
	Left					
SSV	Right					
	Left					
Other: e.g. ATV	Right					
	Left					

Operation Time: _____(Mins)

Pain Visual Analogue Score
Pre-op
At vein access
During procedure

Intra-op Complications: ☐Yes ☐ No

Follow-up Date : _____ ☐ 2 weeks ☐ 3 months ☐ 6 months ☐ 12 months

Complications : ☐ Phlebitis ☐ Ecchymosis ☐ DVT ☐ Hematoma ☐ Residual VV

☐ Access site infection ☐ Paresthesia

☐ Others: _____

Ecchymosis Score ☐ 1 (<25%) ☐ 2 (25 – 50%) ☐ 3 (50 – 75%)

☐ 4 (75 – 100%) ☐ 5 (Extension)

Pain medication taken: **Duration (days/number of times):**

Pain Score : ____ / 10

Occlusion : ☐ Yes ☐ No

Venous Clinical Severity Score

Please indicate right or left leg or bilateral (R, L or B)

	Absent	**Mild**	**Moderate**	**Severe**
Pain	None	Occasional, non/ no analgesia restricting	With moderate activity, occasional analgesia	Daily, severe limitations, regular analgesia
Varicose veins>4mm	None	Few	Multiple GSV	Extensive GSV and LSV
Venous oedema	None	Evening/ankle	Afternoon/ above knee	Morning/requiring elevation
Skin pigmentation	None	Limited and old/brown	Diffuse lower third/ purple	Wide/ purple
Inflammation	None	Mild cellulitis in marginal area	Moderate involving most of gaiter area	Severe cellulitis or significant eczema
Induration	None	Focal <5cm	Medial or lateral less than lower 1/3	1/3 of lower leg or more
Number of active ulcers	0	1	2	3
Active ulcer duration	None	<3 months	>3 months <12 months	>12 months
Active ulcer diameter(cm)	None	<2	2-6	>6
Compression	Not used or non compliant	Intermittent use	Stockings worn most days	Stockings worn daily

APPENDIX 6: EQ-5D Quality of Life Questionnaire

EQ5D ☐ Baseline ☐ 2 weeks ☐ 3 months ☐ 6 months ☐ 12 months

Your overall general health

**Please indicate which statement best describes your own health state. (*Tic*
*only one box in each group)***

Mobility	I have no problems in walking about	☐
	I have some problems in walking about	☐
	I am confined to bed	☐
Self-care	I have no problems with self-care	☐
	I have some problems washing and dressing myself	☐
	I am unable to wash myself	☐
Usual activities	*For example, housework, family or leisure activities*	
	I have no problems with performing my usual activities	☐
	I have some problems with performing my usual activities	☐
	I am unable to perform my usual activities	☐
Pain/discomfort	I have no pain or discomfort	☐
	I have moderate pain or discomfort	☐
	I have extreme pain or discomfort	☐
Anxiety/depression	I am not anxious or depressed	☐
	I am moderately anxious or depressed	☐
	I am extremely anxious or depressed	☐

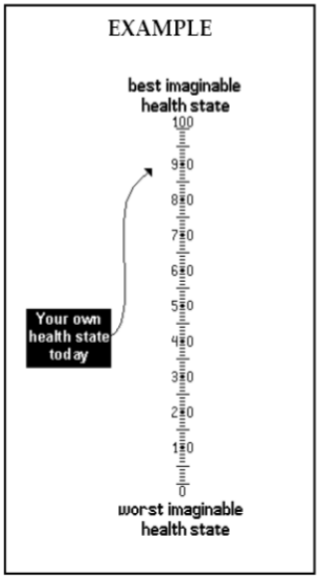
DESCRIBING YOUR OWN HEALTH TODAY

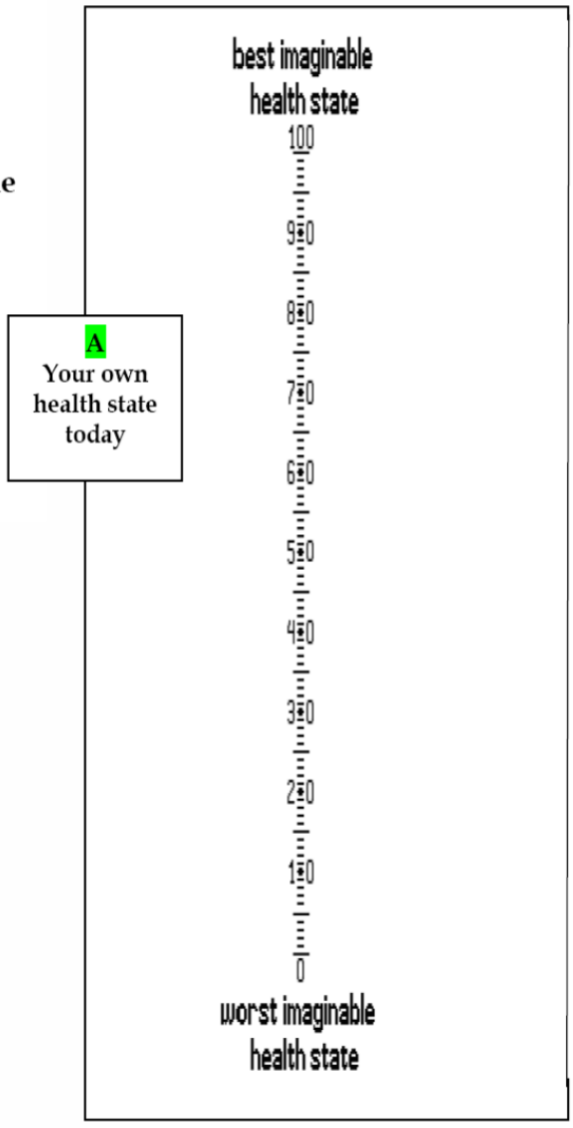
Please indicate on this scale how good or bad your own health state is today.

The best health state you can imagine is marked 100 and the worst health state you can imagine is marked 0.

Please draw a line from box A to the point on the scale that best indicates how good or bad your health state is today.

EXAMPLE





APPENDIX 7: Aberdeen Varicose Vein Questionnaire

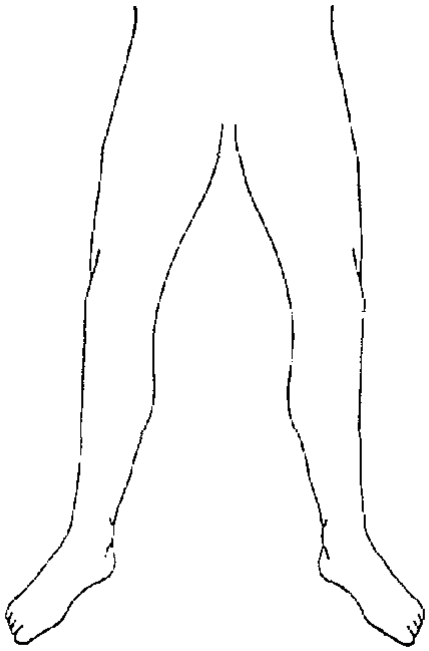
Aberdeen Varicose Vein Questionnaires

☐ Baseline ☐ 2 weeks ☐ 3 months ☐ 6 months ☐ 12 months

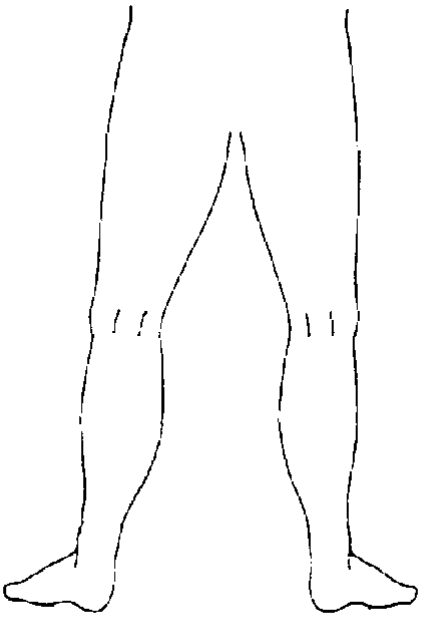
YOUR VARICOSE VEINS

1. Please draw in your varicose veins in the diagram(s) below:-

Legs viewed from front



Legs viewed from back



2. In the last two weeks, for how many days did your varicose veins cause you pain or ache?

(Please tick one box for each leg)

	R Leg	L Leg
None at all	☐	☐
Between 1 and 5 days	☐	☐
Between 6 and 10 days	☐	☐
For more than 10 days	☐	☐

3. During the last two weeks, on how many days did you take painkilling tablets for your varicose veins?

(Please tick one box for each leg)

	R Leg	L Leg
None at all	☐	☐
Between 1 and 5 days	☐	☐
Between 6 and 10 days	☐	☐
For more than 10 days	☐	☐

4. In the last two weeks, how much ankle swelling have you had?

(Please tick one box)

- ☐ None at all
- ☐ Slight ankle swelling
- ☐ Moderate ankle swelling (eg. causing you to sit with your feet up whenever possible)
- ☐ Severe ankle swelling (eg. causing you difficulty putting on your shoes)

5. In the last two weeks, have you worn support stockings or tights?

(Please tick one box for each leg)

	R Leg	L Leg
No	☐	☐
Yes, those I bought myself without a doctor's prescription	☐	☐
Yes, those my doctor prescribed for me which I wear occasionally	☐	☐
Yes, those my doctor prescribed for me which I wear every day	☐	☐

6. In the last two weeks, have you had any itching in association with your varicose veins?

(Please tick one box for each leg)

	R Leg	L Leg
No	☐	☐
Yes, but only above the knee	☐	☐
Yes, but only below the knee	☐	☐
Both above and below the knee	☐	☐

7. Do you have purple discolouration caused by tiny blood vessels in the skin, in association with your varicose veins?

(Please tick one box for each leg)

	R Leg	L Leg
No	☐	☐
Yes	☐	☐

8. Do you have a rash or eczema in the area of your ankle?

(Please tick one box for each leg)

	R Leg	L Leg
No	☐	☐
Yes, but it does not require any treatment from a doctor or district nurse	☐	☐
Yes, and it requires treatment from my doctor or district nurse	☐	☐

9. Do you have a skin ulcer associated with your varicose veins?

(Please tick one box for each leg)

	R Leg	L Leg
No	☐	☐
Yes	☐	☐

10. Does the appearance of your varicose veins cause you concern?

(Please tick one box)

- ☐ No
- ☐ Yes, their appearance causes me slight concern
- ☐ Yes, their appearance causes me moderate concern
- ☐ Yes, their appearance causes me a great deal of concern

11. Does the appearance of your varicose veins influence your choice of clothing including tights?

(Please tick one box)

- ☐ No
- ☐ Occasionally
- ☐ Often
- ☐ Always

12. During the last two weeks, have your varicose veins interfered with your work/ housework or other daily activities?

(Please tick one box)

- ☐ No
- ☐ I have been able to work but my work has suffered to a slight extent
- ☐ I have been able to work but my work has suffered to a moderate extent
- ☐ My veins have prevented me from working one day or more

13. During the last two weeks, have your varicose veins interfered with your leisure activities (including sport, hobbies and social life)?

(Please tick one box)

- ☐ No
- ☐ Yes, my enjoyment has suffered to a slight extent
- ☐ Yes, my enjoyment has suffered to a moderate extent
- ☐ Yes, my veins have prevented me taking part in any leisure activities

APPENDIX 8:

CIVIQ 14 Questionnaire

☐ Baseline ☐ 2 weeks ☐ 3 months ☐ 6 months ☐ 12 months

C I V I Q-14

SELF-QUESTIONNAIRE PATIENTS

In English language for UK

Many people complain of leg pain. We would like to find out how often these leg problems occur and to what extent they affect the everyday lives of those who suffer from them.

Below you will find a list of symptoms, sensations or types of discomfort that you may be experiencing and which may make everyday life hard to bear to a greater or lesser extent. **For each symptom, sensation, or type of discomfort listed, we would like you to answer in the following way:**

Please indicate if you have experienced what is described in each sentence, and if the answer is 'yes', how **intense** it was. There are five possible answers, and we would like you to circle the one which best describes your situation.

Circle 1	if you feel the symtom, sensation of discomfort described does not apply to you
Circle 2, 3, 4 or 5	if you have felt it to a greater or lesser extent

QUALITY OF LIFE WITH VENOUS INSUFFICIENCY

1) During the past four weeks, have you had any **pain** in your **ankles** or **legs**, and how severe has this pain been?
Circle the number that applies to you.

No pain	Slight pain	Moderate pain	Considerable pain	Severe pain
1	2	3	4	5

2) During the past four weeks, how much trouble have you experienced at **work** or during your **usual daily activities because of your leg problems**?
Circle the number that applies to you.

No trouble	Slight trouble	Moderate trouble	Considerable trouble	Severe trouble
1	2	3	4	5

3) During the past four weeks, have you **slept badly** because of your leg problems, and how often?
Circle the number that applies to you.

Never	Rarely	Fairly often	Very often	Every night
1	2	3	4	5

	During the past four weeks, how much **trouble** have you experienced **carrying out the actions and activities** listed below b**ecause of your leg problems?** *Please answer by circling the number that best indicate how much trouble you have experienced*				
	No trouble	Slight trouble	Moderate trouble	Considerable trouble	Could not do it
4) Climbing several flights of stairs	1	2	3	4	5
5) Crouching, Kneeling down	1	2	3	4	5
6) Walking at a brisk pace	1	2	3	4	5
7) Going out for the evening, going to a wedding, a party, a cocktail party…	1	2	3	4	5
8) Playing a sport, exerting yourself physically	1	2	3	4	5

	Leg problems can also affect your mood. How closely do the following statements correspond to what you have felt during the past four weeks? *For each statement in the table below, circle the number that applies to you.*				
	Not at all	A little	Moderately	A lot	Completely
9) I have felt nervous/tense	1	2	3	4	5
10) I have felt I am a burden	1	2	3	4	5
11) I have felt embarrassed about showing my legs	1	2	3	4	5
12) I have become irritated easily	1	2	3	4	5
13) I have felt as if I am handicapped	1	2	3	4	5
14) I have not felt like going out	1	2	3	4	5

APPENDIX 9: Patient Satisfaction Survey

Patient Satisfaction Survey

☐ Baseline ☐ 2 weeks ☐ 3 months ☐ 6 months ☐ 12 months

Instruction on Completion:
Please indicate with a tick ☑ in the corresponding box.

1. How satisfied are you with the treatment provided for your varicose vein?

   ☐ Extremely satisfied
   ☐ Very satisfied
   ☐ Moderately satisfied
   ☐ Not so satisfied
   ☐ Dissatisfied

2. You have indicated that you are not so satisfied or dissatisfied with the treatment. Why is that so?

   ☐ Not helpful
   ☐ Long recovery time
   ☐ Too painful
   ☐ Others,

   _____

3. Based on your experience with your current treatment, would you see it as sometime that you would go for if there was a recurrence of varicose vein?

   ☐ Definitely will
   ☐ Probably will
   ☐ Might or Might Not
   ☐ Probably will not
   ☐ Definitely will not

4. How do you rate the appearance of your legs after varicose vein surgery?

   ☐ Much worse
   ☐ Somewhat worse
   ☐ Unchanged
   ☐ Somewhat improved
   ☐ Much improved

5. How are your symptoms in your legs after your varicose vein surgery?

   ☐ Much worse
   ☐ Somewhat worse
   ☐ Unchanged
   ☐ Somewhat improved
   ☐ Much improved

Additional Comments if any:

APPENDIX 10: Patient Satisfaction Survey

Patient Diary

Please indicate at what stage you were able to return to work and your normal daily activities (the activities you were able to do prior to treatment).

Please also indicate the day when you stopped wearing the compression stockings (if provided).

(Please tick one box)

	Day I was able to resume my normal activities	Day I returned to work	Day I stopped wearing compression stockings
Day of surgery			
Day after surgery			
2 days after surgery			
3 days after surgery			
4 days after surgery			
5 days after surgery			
6 days after surgery			
7 days after surgery			
8 days after surgery			
9 days after surgery			
10 days after surgery			
>10 days after surgery			

Please return to:

Chary Yap Jia Qi
Level 5; Department of Vascular Surgery
Academia
20 College Road
Singapore 169856
Tel: (65) 6576 7986

Patient Pain Diary (VAS)

Please put a mark on the line to indicate your maximum pain score on each day. Please also write a score from 0 to 10 for your maximum pain on each day.

Example*: If your pain score on day 4 is roughly about 5 over 10 (10 being the worst pain imaginable), you might want to indicate it as below:*

Day 4	No pain 0	5 |	Worst pain imaginable 10

Study Diary:

(0 = no pain and 10 = worst pain imaginable)

Day 0	No pain 0		Worst pain imaginable 10
Day 1	No pain 0		Worst pain imaginable 10
Day 2	No pain 0		Worst pain imaginable 10
Day 3	No pain 0		Worst pain imaginable 10
Day 4	No pain 0		Worst pain imaginable 10
Day 5	No pain 0		Worst pain imaginable 10
Day 6	No pain 0		Worst pain imaginable 10
Day 7	No pain 0		Worst pain imaginable 10
Day 8	No pain 0		Worst pain imaginable 10
Day 9	No pain 0		Worst pain imaginable 10
Day 10	No pain 0		Worst pain imaginable 10

APPENDIX 11: Flowchart